Exploring Aeronautics			
2002 Science and Technology			
Academic Standards			
Pennsylvania Science and Technology			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	PA	SCT.7.3.2.7.B.3	Communicate, use space / time relationships, define operationally, raise questions, formulate hypotheses, test and experiment,
Fundamentals of Aeronautics (145-176)	PA	SCT.7.3.4.7.C.1	Describe the motion of an object based on its position, direction and speed.
Fundamentals of Aeronautics (145-176)	PA	SCT.7.3.4.7.C.3	Explain various motions using models.
Wings(177-208)	PA	SCT.7.3.6.7.A.3	Explain the factors that were taken into consideration when a specific object was designed.
Wings(177-208)	PA	SCT.7.3.6.7.C.6	Explain the difference between design engineering and production engineering processes.
Wings(177-208)	PA	SCT.7.3.8.7.A.1	Identify and describe the unavoidable constraints of technological design.
Airplane Control(209-256)	PA	SCT.7.3.4.7.C.3	Explain various motions using models.
Airplane Control(209-256)	PA	SCT.7.3.6.7.A.3	Explain the factors that were taken into consideration when a specific object was designed.
Airplane Control(209-256)	PA	SCT.7.3.6.7.C.6	Explain the difference between design engineering and production engineering processes.
Airplane Control(209-256)	PA	SCT.7.3.8.7.A.1	Identify and describe the unavoidable constraints of technological design.
Tools of Aeronautics(257-326)	PA	SCT.7.3.1.7.B.1	Identify and describe different types of models and their functions.
Tools of Aeronautics(257-326)	PA	SCT.7.3.5.7.C.3	Identify how cloud types, wind directions and barometric pressure changes are associated with weather patterns in different regions of the country.
Tools of Aeronautics(257-326)	PA	SCT.7.3.6.7.A.3	Explain the factors that were taken into consideration when a specific object was designed.
The Activity Center	PA	SCT.7.3.6.7.C.6	Explain the difference between design engineering and production engineering processes.
The Activity Center	PA	SCT.7.3.8.7.A.1	Identify and describe the unavoidable constraints of technological design.
The Resource Center	PA	SCT.7.3.4.7.D.7	Identify the accomplishments and contributions provided by selected past and present scientists in the field of astronomy.
Science of Flight	PA	SCT.7.3.1.7.B.1	Identify and describe different types of models and their functions.

Science of Flight	PA	SCT.7.3.1.7.B.2	Apply models to predict specific results and observations (e.g., population growth, effects of infectious organisms).
Science of Flight	PA	SCT.7.3.1.7.B.3	Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.
Science of Flight	PA	SCT.7.3.5.7.C.6	Identify different air masses and global wind patterns and how they relate to the weather patterns in different regions of the U.S.
Science of Flight	PA	SCT.7.3.7.7.A.1	Identify uses of tools, machines, materials, information, people, money, energy and time that meet specific design criteria.
Integrating with Aeronautics	PA	SCT.7.3.7.7.B.2	Apply knowledge of different measurement systems to measure and record objects' properties.
Intro to Aeronautics (109-123)	PA	SCT.7.3.2.7.B.5	Interpret data, formulate models, design models, and produce solutions.
Intro to Aeronautics (109-123)	PA	SCT.7.3.8.7.A.1	Identify and describe the unavoidable constraints of technological design.
Scientific Method(124-144)	PA	SCT.7.3.2.7.B.3	Communicate, use space / time relationships, define operationally, raise questions, formulate hypotheses, test and experiment,
Scientific Method(124-144)	PA	SCT.7.3.2.7.B.5	Interpret data, formulate models, design models, and produce solutions.
Scientific Method(124-144)	PA	SCT.7.3.2.7.C.6	Communicate appropriate conclusions from the experiment.